

**New Development and Redevelopment Projects
Post-Construction Stormwater Treatment
and Trash Control Requirements**

Purpose

To mitigate runoff and stormwater pollution, federal, state and local regulatory agencies developed post-construction stormwater treatment requirements for new development and redevelopment projects. The Ventura County Municipal Separate Storm Sewer System (MS4) Permit defines new development and redevelopment categories subject to post-construction stormwater treatment controls. The Water Quality Control Plan for Ocean Waters of California and Water Quality Controls Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California also establish trash control requirements for developed areas. All new development and redevelopment projects that meet post-construction stormwater treatment applicability criteria outlined below are required to design, install/implement and maintain, in perpetuity, stormwater treatment devices and best management practice (BMPs) on their sites. The goals of post-construction stormwater treatment and trash control devices are to capture stormwater-related pollution at its source and prevent pollutants from entering our local rivers and coastal waters.

Development is defined as any construction, rehabilitation, redevelopment or reconstruction of any public or private residential project (regardless of size); industrial, commercial, retail and any other non-residential project, including public agency projects; or mass grading for future construction.

New Development and Redevelopment Post-Construction Stormwater Treatment Applicability

All **new development** projects that meet any of the below applicability categories are required to implement post-construction stormwater pollution treatment devices and BMPs onsite:

- 1) All development projects equal to 1 acre or greater of disturbed area that adds more than 10,000 square feet of impervious surface area;
- 2) Industrial parks with 10,000 square feet or more of total altered surface area;
- 3) Commercial strip malls with 10,000 square feet or more of impervious surface area;
- 4) Retail gasoline outlets with 5,000 square feet or more of total altered surface area;
- 5) Restaurants with 5,000 square feet or more of total altered surface area;
- 6) Parking lots with 5,000 square feet or more of impervious surface area, or with 25 or more parking spaces;
- 7) Streets, roads, highways and freeway construction of 10,000 square feet or more of impervious surface area;
- 8) Automotive service facilities of 5,000 square feet or more of total altered surface area;
- 9) Projects located in or directly adjacent to, or discharging directly to an Environmentally Sensitive Area (ESA), where the development will:
 - a. Discharge stormwater runoff that is likely to impact a sensitive biological species or habitat;
 - b. Create 2,500 square feet or more of impervious surface area;
- 10) Single-family hillside homes as defined in San Buenaventura Municipal Code Section 24.110.900 as "Hillside Area".

All **redevelopment** projects that meet the below applicability categories are required to implemented post-construction stormwater pollution treatment devices and BMPs onsite:

- 1) Land-disturbing activity that results in the creation or addition or replacement of 5,000 square feet or more of impervious surface area on an already developed site. Already developed sites, for the purposes of post-construction stormwater pollution treatment device applicability, are defined as one of the 10 applicability categories for new development identified on the first page. When redevelopment projects meet applicability criteria, post-construction stormwater treatment device sizing requirements are determined using the project's impervious surface percentage (see below). Demolition of entire site prior to redevelopment is considered new development.
 - a. Projects where redevelopment results in an alteration to more than fifty percent of impervious surfaces of a previously existing development, and the existing development was not subject to the post-construction stormwater quality control requirements, the entire site's stormwater, including unaltered portions, must be captured and mitigated by stormwater treatment device(s).
 - b. Projects where redevelopment results in an alteration to more than fifty percent of impervious surfaces of a previously existing development, and the existing development was previously subject to post-construction stormwater quality control requirements, the project must only capture and mitigate stormwater from the altered portion of the redevelopment project area and not the entire site.
 - c. Projects where redevelopment results in an alteration of less than fifty percent of impervious surfaces of a previously existing development must only capture and mitigate stormwater from the altered portion of the redevelopment project area and not the entire site.

Impervious surfaces are defined as hardscapes that are incapable of absorbing water or removing pollutants. Impervious areas usually consist of streets, rooftops, parking lots and walkways. Some hardscapes are capable of stormwater infiltration and pollutant removal, and therefore may be considered partially or completely pervious surfaces. Pervious concrete, pavers and other hardscapes are only considered pervious surfaces when designed following Ventura County Technical Guidance Manual for Stormwater Quality Control Measures specifications.

Types of Post-Construction Stormwater Treatment Devices

- 1) **Onsite Retention** – Runoff volume reduction or elimination through designed infiltration, bioretention, on-site reuse or evaporation. Retention typically results in significantly less water leaving a facility than enters.
- 2) **Onsite Biofiltration** – The process of filtration, adsorption and biological update of pollutants in stormwater that take place when runoff flows through vegetated areas such as swales, rain gardens and planter boxes. Biofiltration typically results in incidental infiltration, however does not rely upon infiltration for entire treatment.
- 3) **Onsite Flow Based Treatment Control Measures** – Full volume of water entering device leaves device, however, water is released typically at a slower rate than enters following pollutant removal. These types of devices have high efficiency pollution removal and may be modular, vault type devices contained within an impervious vault with an underdrain or designed with an impervious liner and an underdrain.

Onsite Post-Construction Stormwater Treatment Device Selection Hierarchy:

Retention stormwater treatment devices are required to be used onsite to mitigate stormwater pollution. If onsite retention is determined to be technically infeasible, projects may use onsite biofiltration that achieves 1.5 times the amount of stormwater volume and pollutant load reduction as would be achieved by onsite retention. If biofiltration is not feasible, flow based treatment control measures may be used in place of biofiltration devices, at the approval of the City. **Projects must provide proof of technical infeasibility before biofiltration or flow based treatment control measure are explored. Pretreatment and gross solids removal devices such as hydrodynamic separators, catch basin inserts, trench drains filters, trash capture devices, etc. are not considered complete flow based treatment control measures and cannot be used as the sole stormwater treatment onsite.**

Technical Infeasibility

To utilize onsite biofiltration or flow based treatment control measures, projects are required to show onsite retention is technical infeasible. Technical infeasibility must be justified by submission of a site-specific hydrologic and/or design analysis conducted and endorsed by a registered civil engineer or professional geologist. Technical infeasibility conditions include:

- 1) Locations where seasonal high groundwater is within five (5) feet from bottom of infiltration BMP;
- 2) Site-specific analyses show that onsite soils have an infiltration rate less than 0.3 inches per hour;
- 3) Locations within 100 feet of a groundwater well used for drinking water;
- 4) Brownfield development sites or other locations where pollutant mobilization is a documented concern;
- 5) Locations with potential geotechnical hazards;
- 6) Smart Growth areas. Ventura is an "infill first" city meaning new development and redevelopment are directed toward vacant land in the City Sphere of Influence with the goal of avoiding urban sprawl. For the purpose of stormwater treatment device technical infeasibility, areas of the City considered Smart Growth are those within the Downtown Specific Plan, Midtown Corridor Code and Victoria Corridor Code. Infill or redevelopment locations where dwelling density creates significant difficulty for compliance with onsite volume retention requirements may also be considered for technical infeasibility on a case-by-case basis; and
- 7) Other site or implementation constraints are considered on a case-by-case basis.

Post-Construction Stormwater Treatment Device Sizing

Post-construction stormwater treatment devices are required to be sized to capture the Stormwater Quality Design Volume (SWQDV). Projects are required to treat the SWQDV using retention devices or 150% SWQDV if biofiltration. Flow based treatment control measures are required to treat Stormwater Quality Design Flow (SWQDF).

SWQDV is calculated using one of the four methodologies:

- 1) The 85th percentile 24-hour runoff event determined as the maximized capture stormwater volume for the area using a 48 to 72-hour draw down time, from the formula recommended in Urban Runoff Quality Management, WEF Manual of Practice No. 23/ASCE Manual of Practice No. 87, (1998); or
- 2) The volume of annual runoff based on unit basin storage water quality volume to achieve 80 percent or more volume treatment; or
- 3) The volume of runoff produced from a 0.75-inch storm event; or
- 4) Eighty (80) percent of the average annual runoff volume using an appropriate public domain continuous flow model [such as Storm Water Management Model (SWMM) or Hydrologic Engineering Center – Hydrologic Simulation Program – Fortran (HEC-HSPF)], using the local rainfall record and relevant BMP sizing and design data.

SWQDF is calculated using one of three methodologies:

- 1) The flow of runoff produced from a rain event equal to at least 0.2 inches per hour intensity; or
- 2) The flow of runoff produced from a rain event equal to at least two (2) times the 85th percentile hourly rainfall intensity as determined from local rainfall records; or
- 3) Eight percent of the 50-year storm design flow rate as determined from the method recommended in the Ventura County Technical Guidance Manual for Storm Water Quality Control Measures.

Post-Construction Stormwater Treatment Technical Guidance and Online Resources

The Ventura County Technical Guidance Manual (TGM) for Stormwater Quality Control Measures was developed to assist new and redevelopment projects understand post-construction stormwater requirements, select and size stormwater pollution treatment control device, and provide stormwater treatment device design specification that when implemented meet pollutant load reduction requirements. The Ventura County (TGM) and other support documents are available on the City's [Land Development](#) webpage.

Post-Construction Stormwater Treatment Covenant and Operations and Maintenance Plan

All new development and redevelopment projects required to design, install/implement and maintain post-construction stormwater pollution treatment devices and BMPs shall record a *Declaration of Covenant and Deed Restriction for Post-Construction Stormwater Quality Control Measures Maintenance and Access* and develop an *Operations and Maintenance Plan* for all onsite treatment measures. All post-construction stormwater treatment devices and BMPs are required to remain on the property in perpetuity, regardless of ownership changes, and be maintained on an annual basis. Post-construction stormwater treatment measures covenants are to be recorded with the Ventura County Recorder. Draft covenants and operations and maintenance plans are to be submitted for review during plan check, with templates available on the Land Development webpage.

Post-Construction Trash Control Requirement

Most new development and redevelopment projects are required to install trash capture devices capable of removing trash 5mm or greater from all runoff generated onsite. All stormwater discharge points are required to show trash 5mm or greater will be captured prior to discharging stormwater to the City's storm drain system for Priority Land Uses as defined by Water Quality Control Plan for Ocean Waters of California and Water Quality Controls Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California. Priority Land Uses are high-density residential, industrial, commercial, mixed urban and public transportation stations. Only State certified trash treatment control devices shall be installed to capture trash. Trash control devices typically consist of catch basin inserts, inlet grates and/or treatment controls commonly used for compliance with post-construction stormwater pollution treatment requirements. A list of State approved post-construction trash treatment control devices can be found on the *Certified Full Capture System List of Trash Treatment Control Devices* dispersed by the [California State Water Resources Control Board](#). Post-construction trash control requirements are in addition to post-construction stormwater treatment requirements.

New Development and Redevelopment Projects Post-Construction Stormwater Treatment and Trash Control Compliance Study Submittal Requirements

For submittal requirements, please refer to **Formal Project Stormwater Compliance Study Submittal Checklist, form PW-007.**

All Stormwater Compliance Study documents are to be submitted together in a set. Any deviation or omission from requirements listed will result in an incomplete submission. In the event post-construction stormwater treatment measures and trash controls deviate from what was approved during Planning Application submittal, an updated or new Stormwater Compliance Study is required to be submitted. Updated or new Stormwater Compliance Study must include all requirements identified on form PW-007 as a set.

Questions - please contact Peter F. Shellenbarger, Stormwater Compliance Supervisor, Public Work at 805-652-4582 or pshellenbarger@cityofventura.ca.gov